



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER OF PATENTS AND TRADEMARKS  
Washington, D.C. 20231  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/813,152	03/21/2001	Tetsuya Nakabayashi	0033-0701P	1937

2292 7590 03/19/2003

BIRCH STEWART KOLASCH & BIRCH  
PO BOX 747  
FALLS CHURCH, VA 22040-0747

EXAMINER

VINH, LAN

ART UNIT	PAPER NUMBER
----------	--------------

1765

DATE MAILED: 03/19/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/813,152

Applicant(s)

NAKABAYASHI ET AL.

Examiner

Lan Vinh

Art Unit

1765

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 19 February 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) 1 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 2-10 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☒ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☒ Certified copies of the priority documents have been received in Application No. 09813152.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).  
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)  
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)  
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 4.
- 4) ☐ Interview Summary (PTO-413) Paper No(s) \_\_\_\_\_.  
5) ☐ Notice of Informal Patent Application (PTO-152)  
6) ☐ Other:

**DETAILED ACTION**

***Information Disclosure Statement***

1. The Information Disclosure Statement filed on 3/2/2001 has been considered. The PTO form 1449 is enclosed in this office action.

***Election/Restrictions***

2. Applicant's election, with traverse, of Group II, claims 2-10 in Paper No. 7 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).

***Claim Rejections - 35 USC § 102***

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 1, 5, 6 are rejected under 35 U.S.C. 102(e) as being anticipated by Gorczyca et al (US 6,368,410)

Gorczyca discloses a semiconductor processing method comprises the steps of:

blasting the surface of the processing article, the processing article is a support quartz 8 to support a substrate 9 (col 2, lines 56-57, col 3, lines 1-2), which reads on applying a blasting process on a surface of a support/susceptor that has SiO<sub>2</sub> as a main component

chemical etching of the quartz processing article (col 3, lines 66-67), which reads on etching the surface of the susceptor.

Regarding claim 5, Gorczyca discloses sand blasting using silicon carbide (SiC) during the blasting step (col 3, lines 10-11)

Regarding claim 6, Gorczyca discloses the step of cleaning the surface of the quartz using a high pressure spray of water after the etching step (col 5, lines 56-57), which reads on the step of high pressure rinsing the surface of the susceptor after etching.

5. Claim 7 is rejected under 35 U.S.C. 102(e) as being anticipated by Gorczyca et al (US 6,368,410)

Gorczyca discloses a semiconductor processing method comprises the steps of:

blasting the surface of the processing article ( col 3, lines 1-2), which reads on a first step of applying a blasting process on a surface of a subject to be processed

chemical etching of the processing article (col 3, lines 66-67), which reads on a second step of etching the surface of the subject to be processed

cleaning the surface of the quartz using a high pressure spray of water after the etching step (col 5, lines 56-57), which reads on a third step of cleaning the subject to be processed with rinsing at high pressure.

Art Unit: 1765

***Claim Rejections - 35 USC § 103***

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 3, 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gorczyca et al (US 6,368,410) in view of Usui (US 3,808,751)

Gorczyca's method has been described above in paragraph 4. Unlike the instant claimed invention as per claims 3, 9, Gorczyca does not disclose the step of masking a portion of the susceptor forming contact with the substrate prior to the step of blasting.

However, Usui discloses a method for making a sandblast mask comprises the step of using a sandblast mask 26 to mask a portion of base 21 forming contact with workpiece 20 before sandblasting (col 4, lines 8-42), which reads on the step of masking a portion of the susceptor forming contact with the substrate prior to the step of blasting.

Hence, one skilled in the art would have found it obvious to modify Gorczyca's method by masking a portion of the susceptor prior to the step of blasting as per Usui because Usui states that when a sandblast nozzle is moved over the entire surface so that the stream of sand strikes only the exposed portions of the workpiece/substrate through the sandblast mask, the workpiece can be uniformly and efficiently removed (col 4, lines 43-47)

Art Unit: 1765

8. Claims 4, 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gorczyca et al (US 6,368,410) in view of Macdonald et al (US 6,494,960)

Gorczyca's method has been described above in paragraph 5. Gorczyca differs from the instant claimed inventions as per claims 4, 10 by performing the step of cleaning rinsing the surface of the susceptor after the step of blasting instead of prior to the step of blasting / although Gorczyca is not particular about when to perform the cleaning/rinsing step by stating that his process can include other step to remove loosely adhering pieces such as cleaning and rinsing step (col 5, lines 52-55)

However, Macdonald discloses a method for removing a coating from a substrate comprises the step of rinsing the substrate before/in prior to an abrasion step such as a blasting step (col 7, lines 29-34)

Since Gorczyca is not particular about when to perform the cleaning/rinsing step, one skilled in the art would have found it obvious to modify Gorczyca's method by cleaning rinsing the surface of the susceptor prior to the step of blasting in view of Macdonald's teaching because according to Macdonald the use of the rinsing step before the abrasion step/blasting step usually decreases the time required for carrying out the abrasion/blasting step (col 7, lines 33-36)

9. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Gorczyca et al (US 6,368,410) in view of Oguchi et al (US 4,648,691)

Gorczyca discloses a semiconductor processing method comprises the steps of:

Art Unit: 1765

blasting the surface of the surface of a quartz substrate (col 2, lines 56-57, col 3, lines 1-2), which reads on a first step of applying a blasting process on a surface of a substrate

chemical etching of the quartz article (col 3, lines 66-67), which reads on a second step of etching the surface of the substrate

cleaning the surface of the quartz using a high pressure spray of water after the etching step (col 5, lines 56-57), which reads on a third step of cleaning the subject to be processed with rinsing at high pressure.

Unlike the instant claimed invention as per claim 8, Gorczyca does not specifically disclose performing the blasting step and etching step on a surface of the TFT(thin film transistor ) substrate.

However, Oguchi discloses a method for forming liquid crystal display device comprises the step of etching or sandblasting a thin film on a glass substrate (col 2, lines 50-57)

Hence, one skilled in the art would have found it obvious to employ Gorczyca's blasting and etching step on a thin film substrate in view of Oguchi teaching because Oguchi teaches that the thin film may be applied by methods such as etching or sandblasting (col 2, lines 54-57)

Art Unit: 1765

***Conclusion***

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lan Vinh whose telephone number is 703 305-6302.

The examiner can normally be reached on M-F 8:30-5:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Benjamin Utech can be reached on 703 308-3836. The fax phone numbers for the organization where this application or proceeding is assigned are 703 872-9310 for regular communications and 703 872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703 308-0661.



LV

March 13, 2003